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## TRANSURETHRAL DRAINAGE FOR PROSTATIC ABSCESS IN A PATIENT WITH METASTATIC TESTICULAR CANCER UNDERGOING SYSTEMIC CHEMOTHERAPY

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We report a case of prostatic abscess in a 22-year-old man with metastatic testicular cancer being treated by BEP (bleomycin, etoposide and cisplatin) chemotherapy. This abscess was successfully treated by surgical drainage with transurethral resection of the prostate (TURP) under the guidance of transrectal ultrasound, allowing the patient to continue be receiving BEP without significant interruption. Drainage TURP is suggested to be a useful strategy for prostate abscess, when prompt control of symptoms caused by prostatic abscess is required.

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**Key words** : Prostatic abscess, Transurethral resection of the prostate, Testicular cancer, Cisplatin-based combination chemotherapy

### INTRODUCTION

Prostatic abscess is a rare but potentially fatal condition, particularly when occurring in patients with a compromised immune system<sup>1)</sup>. To date, several therapeutic options have been reported, such as high-dosage antibiotic treatment combined with perineal incision, transurethral resection of the prostate (TURP) or needle aspiration<sup>2)</sup>. Because of the low morbidity, needle aspiration has recently been regarded a feasible alternative to drainage TURP; however, repeated procedures may frequently be required, and in case of failure, drainage TURP should be undertaken<sup>3,4)</sup>. We herein report a case of prostatic abscess in a patient who received cisplatin-based combination chemotherapy for metastatic testicular cancer, and was subsequently treated by drainage TURP considering its immediate effect on infectious control in order to avoid interrupting the treatment of advanced testicular cancer.

### CASE REPORT

A 22-year-old man, who had been diagnosed with right testicular cancer with multiple metastases in the lungs and brain, was referred to our institution. Right high orchiectomy had already been performed, and histological examination revealed mixed germ cell tumors mainly consisting of choriocarcinoma and teratoma. Immediately after admission to our hospital, BEP chemotherapy (cisplatin 20 mg/m<sup>2</sup> on days 1 to 5, etoposide 100 mg/m<sup>2</sup> on days 1 to 5, and bleomycin on days 2, 9 and 16)<sup>5)</sup> was administered. Steroid was also given to improve the edema surrounding the brain metastases.

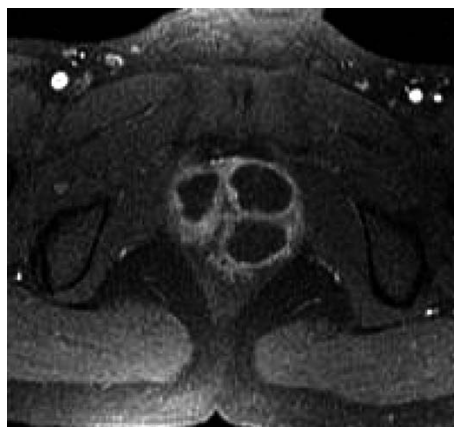
Seven days after the initiation of BEP, he developed a high fever of 40.0°C with leukocytes 700/mm<sup>3</sup> and C-

reactive protein 5.9 mg/dl. Accordingly, considering his severe immunosuppressed condition due to the administration of chemotherapeutic agents and steroid, antibiotic therapy using Meropenem (1 g/day) or Ceftazidime (2 g/day) was started, and thereafter his symptoms were improved. Although the origin of fever was unclear, urinary tract infection was not suspected at this point because of the lack of any urinary symptoms as well as the normal findings on digital rectal examination (DRE).

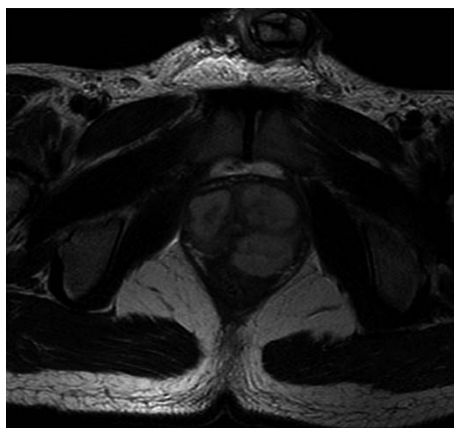
Following one course of BEP, computed tomography (CT), which was routinely performed to estimate the effect of BEP, incidentally detected three masses in the prostate showing lower attenuation with rim enhancement (Fig. 1), and laboratory examination showed leukocytes 13,600/mm<sup>3</sup> and C-reactive protein 1.9 mg/dl. On T1-weighted images of magnetic resonance imaging (MRI), the interior of these masses demonstrated a



**Fig. 1.** Computed tomography scan of prostatic abscess before treatment.



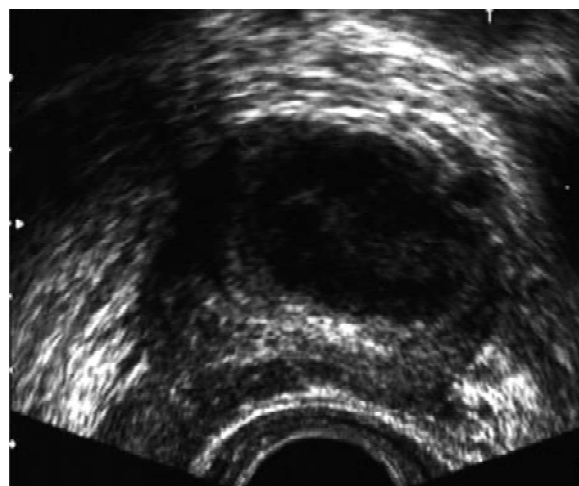
(a)



(b)

**Fig. 2.** Magnetic resonance imaging of prostatic abscess before treatment. (a) T1-weighted image. (b) T2-weighted image.

hypointense signal and only the margins were well enhanced by gadolinium (Fig. 2a), while the interior showed a high signal intensity surrounded by a margin of hypointense signal on T2-weighted MRI (Fig. 2b). Considering these radiological findings, two examinations were carried out in order to determine whether these masses were prostatic abscess or metastatic lesions



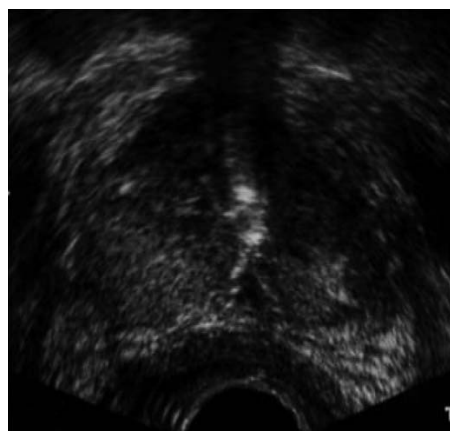
**Fig. 3.** Transrectal ultrasound image of prostatic abscess before treatment.

of the testicular cancer. Transperineal puncture under the guidance of transrectal ultrasonography (TRUS) (Fig. 3) aspirated yellowish puruloid discharge, in which *P. aeruginosa* was isolated, and transrectal prostate biopsy failed to detect any malignant lesion. Based on these findings, he was diagnosed as having prostatic abscess.

Since he was under treatment for metastatic testicular cancer with systemic chemotherapy, it was considered important to cure prostatic abscess as promptly and completely as possible. Drainage TURP, therefore, was selected for this patient as an initial therapy for prostatic abscess. After cystostomy was created, TURP was performed under TRUS guidance, and by this procedure, puruloid discharge was drained until the hypoechoic lesions disappeared on TRUS. Complete remission of the prostatic abscess was confirmed on TRUS and CT (Fig. 4). The postoperative course was uneventful and the values of both leukocytes and C-reactive protein were normalized. Seven days after drainage TURP, BEP chemotherapy was restarted.

### DISCUSSION

Since the widespread use of broad-spectrum antibiotics, prostatic abscess has become a rare disease with an incidence of only 0.5–2.5% of diseases accompanying



(a)



(b)

**Fig. 4.** Postoperative findings of prostate. (a) Transrectal ultrasonography. (b) Computed tomography.

prostatic symptoms; however, prostatic abscess has remained a serious disease, and delay in appropriate treatment may even be fatal<sup>1)</sup>. To date, several predisposing factors have been characterized, including indwelling catheters, bladder outlet obstruction, acute and chronic prostatitis and a compromised immune system associated with chronic renal failure, malignant tumor, diabetes mellitus and liver cirrhosis<sup>2)</sup>. In this report, we described an initial case who developed prostatic abscess under immunosuppression induced by systemic chemotherapy for advanced testicular cancer.

Due to the lack of reliable clinical findings specific to prostatic abscess, it is usually difficult to precisely diagnose this disease. Despite the diverse incidence in the literature, fluctuation during DRE has been reported as the most typical symptom of prostatic abscess<sup>2,6)</sup>; however, in the present case, DRE findings were normal and there were no urinary symptoms. Furthermore, diagnosis remained difficult to establish after radiological examinations performed in this case, including TRUS, CT and MRI. Several recent studies indicate that CT and MRI do not offer an advantage over TRUS for diagnosing the prostatic abscess, and TRUS demonstrates common findings characterized by a hypoechoic lesion with a peripheral hyperechoic halo in approximately 70% of patients with prostatic abscess<sup>2-4)</sup>. These findings suggest that when it would be difficult to obtain definitive diagnosis based on clinical symptoms and TRUS findings, it would be necessary to consider a more invasive procedure, such as aspirate culture.

For the treatment of prostatic abscess, both conservative and surgical approaches have been described. The administration of antibiotic agents is effective in limited cases, such as monofocal abscess less than 1 cm in diameter; however, surgical intervention should be performed in cases showing multiple and/or large abscesses<sup>7)</sup>. Of several surgical options, transurethral needle aspiration has tended to be recommended because it is easy to perform and has low morbidity; however, abscesses remain or recur after this procedure in some cases<sup>1,3,4,6)</sup>. In this case, it was important to cure the prostatic abscess promptly and completely, since the patient was receiving treatment for metastatic testicular cancer by systemic chemotherapy and it was absolutely necessary to restart chemotherapy as immedi-

ately as possible. Accordingly, TURP under the guidance of TRUS was performed in this case, and complete drainage was confirmed by TRUS findings. The patient then could continue receiving chemotherapy without significant interruption. However, it would be important to consider the risk of septic infection and retrograde ejaculation associated with the procedure of TURP.

In conclusion, it is important to rapidly establish definitive diagnosis and to select an optimal therapeutic modality according to disease status in each case in order to successfully treat the prostatic abscess. Despite its high morbidity, drainage TURP is suggested to be an attractive approach when prompt control of symptoms associated with prostatic abscess is required.

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## 和文抄録

転移性精巣腫瘍に対する化学療法施行中に発症した前立腺膿瘍に  
経尿道的前立腺切除による外科的ドレナージを行った1例

寺川 智章, 三宅 秀明, 中野 雄造, 田中 一志  
武中 篤, 原 勲, 藤澤 正人  
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症例は22歳, 男性. 転移性精巣腫瘍に対してブレオマイシン, エトポシドおよびシスプラチン併用化学療法 (BEP 療法) 中に, *P. aeruginosa* 感染が原因と考えられる前立腺膿瘍を発症した. 本症例には化学療法の速やかな再開が必要であることを考慮し, 迅速かつ完全な感染制御効果を得るために, 経直腸的前立腺エコーによるモニタリング下に経尿道的前立腺切除

(TURP) を行い, 外科的ドレナージを施行した. 術後経過は良好で病巣の完全消退を確認の上, ドレナージ施行7日後に化学療法を再開した. 以上より, 迅速な病勢制御を要する前立腺膿瘍に対するドレナージTURP は有効な治療手段であると考えられた.

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